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(FILE 'HOME' ENTERED AT 10:43:21 ON 08 JUN 2003)

FILE 'REGISTRY' ENTERED AT 10:44:20 ON 08 JUN 2003
L1 2 S NITRILASE/CN

FILE 'HCAPLUS' ENTERED AT 10:44:54 ON 08 JUN 2003

FILE 'REGISTRY' ENTERED AT 10:44:57 ON 08 JUN 2003
SET SMARTSELECT ON

L2 SEL L1 1- CHEM : 11 TERMS
SET SMARTSELECT OFF

FILE 'HCAPLUS' ENTERED AT 10:44:57 ON 08 JUN 2003

L3 875 S L2

L4 164 S L3 (L) (ESCHERICHIA OR PSEUDOMONAS OR ALCALIGENES)

L5 27 S L4 (L) (DNA OR CDNA OR NUCLEIC ACID OR POLYNUCLEOTIDE)

L6 5 S L5 (L) (CARBOXYLIC ACID OR CARBOXY?)

L7 2 S L6 AND PD<19981019

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L6 ANSWER 1 OF 5 HCAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2001:728817 HCAPLUS

DOCUMENT NUMBER: 136:98244

TITLE: A new type of thermoalkalophilic hydrolase of *Paucimonas lemoignei* with high specificity for amorphous polyesters of short chain-length hydroxyalkanoic acids

AUTHOR(S): Handrick, Rene; Reinhardt, Simone; Focarete, Maria Letizia; Scandola, Mariastella; Adamus, Grazyna; Kowalczyk, Marek; Jendrosseck, Dieter

CORPORATE SOURCE: Institut fur Mikrobiologie, Universitat Stuttgart, Stuttgart, 70569, Germany

SOURCE: Journal of Biological Chemistry (2001), 276(39), 36215-36224

CODEN: JBCHA3; ISSN: 0021-9258

PUBLISHER: American Society for Biochemistry and Molecular Biology

DOCUMENT TYPE: Journal

LANGUAGE: English

AB A novel type of hydrolase was purified from culture fluid of *Paucimonas* (formerly *Pseudomonas*) *lemoignei*. Biochem. characterization revealed an unusual substrate specificity of the purified enzyme for amorphous poly((R)-3-hydroxyalkanoates) (PHA) such as native granules of natural poly((R)-3-hydroxybutyrate) (PHB) or poly((R)-3-hydroxyvalerate) (PHV), artificial cholate-coated granules of natural PHB or PHV, atactic poly((R,S)-3-hydroxybutyrate), and oligomers of (R)-3-hydroxybutyrate (3HB) with six or more 3HB units. The enzyme has the unique property to recognize the phys. state of the polymeric substrate by discrimination between amorphous PHA (good substrate) and denatured, partially cryst. PHA (no substrate). The pentamers of 3HB or 3HV were identified as the main products of enzymic hydrolysis of native PHB or PHV, resp. No activity was found with any denatured PHA, oligomers of (R)-3HB with five or less 3HB units, poly(6-hydroxyhexanoate), substrates of lipases such as tributyrin or triolein, substrates for amidases/nitrilases, DNA, RNA, casein, N-.alpha.-benzoyl-L-arginine-4-nitroanilide, or starch. The purified enzyme (Mr 36,209) was remarkably stable and active at high temp. (60.degree.), high pH (up to 12.0), low ionic strength (distd. water), and in solvents (e.g. Pr alc.). The depolymerase contained no essential SH groups or essential disulfide bridges and was insensitive to high concns. of ionic (SDS) and nonionic (Triton and Tween) detergents. Characterization of the cloned structural gene (phaZ7) and the DNA-deduced amino acid sequence revealed no homologies to any PHB depolymerase or any other sequence of data banks except for a short sequence related to the active site serine of serine hydrolases. A classification of the enzyme into a new family (family 9) of **carboxyesterases** is suggested.

REFERENCE COUNT: 47 THERE ARE 47 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 2 OF 5 HCAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2001:164344 HCAPLUS

DOCUMENT NUMBER: 135:148991

TITLE: Enzymatic characterization of the recombinant *Arabidopsis thaliana* nitrilase subfamily encoded by the NIT2/NIT1/NIT3-gene cluster

AUTHOR(S): Vorwerk, Sonja; Biernacki, Stephanie; Hillebrand, Helke; Janzik, Ingar; Muller, Axel; Weiler, Elmar W.; Piotrowski, Markus

CORPORATE SOURCE: Lehrstuhl fur Pflanzenphysiologie, Ruhr-Universitat, Bochum, 44801, Germany

SOURCE: Planta (2001), 212(4), 508-516

CODEN: PLANAB; ISSN: 0032-0935

PUBLISHER: Springer-Verlag

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Three of the **nitrilase** isoenzymes of *Arabidopsis thaliana* (L.) Heynh. are located on chromosome III in tandem and these genes

(NIT2/NIT1/NIT3 in the 5' 3' direction) encode highly similar polypeptides. Copy DNAs encompassing the entire coding sequences for all three **nitrilases** were expressed in **Escherichia coli** as fusion proteins contg. a C-terminal hexahistidine extension. All three **nitrilases** were obtained as enzymically active proteins, and their characteristics were detd., including a detailed comparative anal. of their substrate preferences. All three **nitrilases** converted indole-3-acetonitrile (IAN) to indole-3-acetic acid (IAA), albeit, compared to the most effective substrates found, phenylpropionitrile (PPN), allylcyanide, (phenylthio)acetonitrile and (methylthio)acetonitrile, with low affinity and velocity. The preferred substrates are either naturally occurring substrates, which may originate from glucosinolate breakdown, or they are close relatives of these. Thus, a major function of NIT1, NIT2 and NIT3 is assigned to be the conversion to **carboxylic acids** of nitriles from glucosinolate turnover or degrdn. While all **nitrilases** exhibit a similar pH optimum around neutral, and NIT1 and NIT3 exhibit a similar temp. optimum around 30.degree. independent of the substrate analyzed (IAN, PPN), NIT2 showed a remarkably different temp. optimum for IAN (15.degree.) and PPN (35-40.degree.). A potential role for NIT2 in breaking seed dormancy in *A. thaliana* by low temps. (stratification), however, was ruled out, although NIT2 was the predominantly expressed **nitrilase** isoform in developing embryos and in germinating seeds, as judged from an anal. of .beta.-glucuronidase reporter gene expression under the control of the promoters of the four isogenes. It is possible that NIT2 is involved in supplying IAA during seed development rather than during stratification.

REFERENCE COUNT: 37 THERE ARE 37 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 3 OF 5 HCAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2000:254122 HCAPLUS

DOCUMENT NUMBER: 132:292813

TITLE: Preparation of chiral carboxylic acids from racemic nitriles by resolution with a stereospecific nitrilase or nitrilase-containing microorganisms

INVENTOR(S): Ress-loeschke, Marion; Friedrich, Thomas; Hauer, Bernhard; Mattes, Ralf; Engels, Dirk

PATENT ASSIGNEE(S): BASF A.-G., Germany

SOURCE: Ger. Offen., 28 pp.

CODEN: GWXXBX

DOCUMENT TYPE: Patent

LANGUAGE: German

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 19848129	A1	20000420	DE 1998-19848129	19981019
WO 2000023577	A1	20000427	WO 1999-EP7679	19991013
W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
AU 9964708	A1	20000508	AU 1999-64708	19991013
BR 9914629	A	20010626	BR 1999-14629	19991013
EP 1123386	A1	20010816	EP 1999-952558	19991013
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, FI, RO				
EE 200100232	A	20020815	EE 2001-200100232	19991013
JP 2002527106	T2	20020827	JP 2000-577288	19991013
NO 2001001912	A	20010418	NO 2001-1912	20010418
ZA 2001004066	A	20020701	ZA 2001-4066	20010518

PRIORITY APPLN. INFO.: DE 1998-19848129 A 19981019

OTHER SOURCE(S): MARPAT 132:292813

AB A stereospecific nitrilase of *Alcaligenes faecalis* that can be used to resolve racemic nitriles in the manuf. of chiral carboxylic acids is described and the gene encoding it is cloned and expressed. The enzyme was purified chromatog. from cultures of *A. faecalis* (0.4% yield) and the gene cloned by PCR with amino acid sequence-derived probes. The gene was expressed in *Escherichia coli* using the rhamnose regulated system of pJOE2702.

L6 ANSWER 4 OF 5 HCAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1998:618329 HCAPLUS

DOCUMENT NUMBER: 129:256000

TITLE: Nitrile hydratase and amidase genes recombinant production in host cells and use for the production of chiral amides and carboxylic acids

INVENTOR(S): Fallon, Robert Donald; Nelson, Mark James; Payne, Mark Scott

PATENT ASSIGNEE(S): E. I. Du Pont De Nemours and Company, USA

SOURCE: U.S., 37 pp.
CODEN: USXXAM

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 2

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5811286	A	19980922	US 1996-726136	19961004
US 5888785	A	19990330	US 1998-103411	19980624
US 6133421	A	20001017	US 1998-103434	19980624
US 6251650	B1	20010626	US 2000-687594	20001013

PRIORITY APPLN. INFO.:

US 1995-4914P P 19951006

US 1996-726136 A3 19961004

US 1998-103434 A3 19980624

AB The present invention provides a nitrile hydratase nucleic acid fragment isolated from *Pseudomonas putida* which encodes a nitrile hydratase activity capable of catalyzing the hydrolysis of certain racemic nitriles to the corresponding R- or S-amides. Also provided are transformed microorganisms capable of the active expression of said nitrile hydratase activity. Addnl., the invention provides a transformant harboring the nitrile hydratase gene in conjunction with an amidase gene, both of which may be co-expressed producing active nitrile hydratase and amidase enzymes resp. Methods for the prodn. of such enantiomeric materials are also provided.

REFERENCE COUNT: 20 THERE ARE 20 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 5 OF 5 HCAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1997:356498 HCAPLUS

DOCUMENT NUMBER: 126:326438

TITLE: Nitrile hydratase and amidase genes recombinant production in host cells and use for the production of chiral amides and carboxylic acids

INVENTOR(S): Fallon, Robert Donald; Nelson, Mark James; Payne, Mark Scott

PATENT ASSIGNEE(S): E.I. Du Pont De Nemours and Company, USA; Fallon, Robert Donald; Nelson, Mark James; Payne, Mark Scott

SOURCE: PCT Int. Appl., 84 pp.
CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 2

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9712964	A2	19970410	WO 1996-US15969	19961003
WO 9712964	A3	19970619		

W: AL, AM, AU, AZ, BA, BB, BG, BR, BY, CA, CN, CU, CZ, EE, GE, HU,
IL, IS, JP, KG, KP, KR, KZ, LC, LK, LR, LT, LV, MD, MG, MK, MN,
MX, NO, NZ, PL, RO, RU, SG, SI, SK, TJ, TM, TR, TT, UA, US, UZ,
VN, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: KE, LS, MW, SD, SZ, UG, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR,
IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML,
MR, NE, SN, TD, TG

CA 2233868	AA 19970410	CA 1996-2233868	19961003
AU 9675148	A1 19970428	AU 1996-75148	19961003
EP 853663	A1 19980722	EP 1996-937659	19961003

R: DE, DK, FR, GB, IT, NL

JP 11513255	T2 19991116	JP 1996-514476	19961003
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PRIORITY APPLN. INFO.:

US 1995-4914P	P 19951006
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WO 1996-US15969	W 19961003
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OTHER SOURCE(S): MARPAT 126:326438

AB The present invention provides a nitrile hydratase nucleic acid fragment isolated from *Pseudomonas putida* which encodes a nitrile hydratase activity capable of catalyzing the hydrolysis of certain racemic nitriles to the corresponding R- or S-amides. Also provided are transformed microorganisms capable of the active expression of said nitrile hydratase activity. Addnl., the invention provides a transformant harboring the nitrile hydratase gene in conjunction with an amidase gene, both of which may be co-expressed producing active nitrile hydratase and amidase enzymes resp. Methods for the prodn. of such enantiomeric materials are also provided.

ACCESSION NUMBER: 1997:356498 HCAPLUS
 DOCUMENT NUMBER: 126:326438
 TITLE: Nitrile hydratase and amidase genes recombinant
 production in host cells and use for the production of
 chiral amides and carboxylic acids
 INVENTOR(S): Fallon, Robert Donald; Nelson, Mark James; Payne, Mark
 Scott
 PATENT ASSIGNEE(S): E.I. Du Pont De Nemours and Company, USA; Fallon,
 Robert Donald; Nelson, Mark James; Payne, Mark Scott
 SOURCE: PCT Int. Appl., 84 pp.
 CODEN: PIXXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 2
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9712964	A2	19970410	WO 1996-US15969	19961003 <--
WO 9712964	A3	19970619		
W: AL, AM, AU, AZ, BA, BB, BG, BR, BY, CA, CN, CU, CZ, EE, GE, HU, IL, IS, JP, KG, KP, KR, KZ, LC, LK, LR, LT, LV, MD, MG, MK, MN, MX, NO, NZ, PL, RO, RU, SG, SI, SK, TJ, TM, TR, TT, UA, US, UZ, VN, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM RW: KE, LS, MW, SD, SZ, UG, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
CA 2233868	AA	19970410	CA 1996-2233868	19961003 <--
AU 9675148	A1	19970428	AU 1996-75148	19961003 <--
EP 853663	A1	19980722	EP 1996-937659	19961003 <--
R: DE, DK, FR, GB, IT, NL				
JP 11513255	T2	19991116	JP 1996-514476	19961003
PRIORITY APPLN. INFO.:			US 1995-4914P	P 19951006
			WO 1996-US15969	W 19961003

OTHER SOURCE(S): MARPAT 126:326438

AB The present invention provides a nitrile hydratase nucleic acid fragment
 isolated from *Pseudomonas putida* which encodes a nitrile hydratase
 activity capable of catalyzing the hydrolysis of certain racemic nitriles
 to the corresponding R- or S-amides. Also provided are transformed
 microorganisms capable of the active expression of said nitrile hydratase
 activity. Addnl., the invention provides a transformant harboring the
 nitrile hydratase gene in conjunction with an amidase gene, both of which
 may be co-expressed producing active nitrile hydratase and amidase enzymes
 resp. Methods for the prodn. of such enantiomeric materials are also
 provided.

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L1 ANSWER 1 OF 2 REGISTRY COPYRIGHT 2003 ACS
RN 82391-37-5 REGISTRY
CN Hydratase, nitrile (9CI) (CA INDEX NAME)
OTHER NAMES:
CN 3-Cyanopyridine hydratase
CN Acrylonitrile hydratase
CN Aliphatic nitrile hydratase
CN E.C. 4.2.1.84
CN **Nitrilase**
CN Nitrile hydratase
MF Unspecified
CI MAN
LC STN Files: AGRICOLA, ANABSTR, BIOBUSINESS, BIOSIS, BIOTECHNO, CA,
CAPLUS, CASREACT, CEN, CHEMINFORMRX, CIN, EMBASE, PROMT, TOXCENTER,
USPAT2, USPATFULL

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

401 REFERENCES IN FILE CA (1957 TO DATE)
4 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
404 REFERENCES IN FILE CAPLUS (1957 TO DATE)

L1 ANSWER 2 OF 2 REGISTRY COPYRIGHT 2003 ACS
RN 9024-90-2 REGISTRY
CN **Nitrilase (9CI)** (CA INDEX NAME)
OTHER NAMES:
CN Acetonitrilase
CN Benzonitrilase
CN E.C. 3.5.5.1
MF Unspecified
CI MAN
LC STN Files: AGRICOLA, ANABSTR, BIOBUSINESS, BIOSIS, BIOTECHNO, CA,
CAPLUS, CASREACT, CBNB, CEN, CHEMCATS, CHEMINFORMRX, CHEMLIST, CIN,
EMBASE, PROMT, TOXCENTER, USPAT2, USPATFULL

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

327 REFERENCES IN FILE CA (1957 TO DATE)
4 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
327 REFERENCES IN FILE CAPLUS (1957 TO DATE)